Massachusetts HIV/AIDS Data Fact Sheet

Who is dying with HIV/AIDS and how has this changed over time?

March 2007

Introduction:

The death data in this fact sheet describe *all* deaths among people reported with HIV/AIDS in Massachusetts, including deaths from *non HIV-related* causes, such as heart disease, cancer, drug and alcohol abuse, liver disease and respiratory disease. Therefore, some of the data here will differ from *HIV-related* deaths reported in *Massachusetts Deaths* by the Massachusetts Department of Public Health, Center for Health Information, Statistics, Research and Evaluation.

Over time there has been an increase, decline and then a leveling-off in the number of deaths among people reported with AIDS in Massachusetts. In the seven-year period from 1999 to 2005, the number of deaths annually among people reported with HIV infection and AIDS ranged from 300 to 423 deaths. This range in number of deaths among people reported with HIV/AIDS may indicate that improvements in care and treatment have resulted in stabilized levels of mortality.

Trends in mortality among people reported with HIV/AIDS reflect shifts in HIV infection and AIDS diagnoses, as well as highlight differential survival across groups. For example, in the past seven years, females have accounted for an increasing proportion of both AIDS diagnoses and deaths among people reported with HIV/AIDS. HIV infection diagnosis patterns across race/ethnicity are mirrored in elevated mortality rates of black (non-Hispanic) and Hispanic individuals compared to white (non-Hispanic) individuals. Regarding exposure mode, over half of all deaths from 1999 to 2005 were among people with a primary reported risk of injection drug use, highlighting a differential survival experienced by this group.

The following analyses describe trends in morbidity and mortality among people reported with HIV/AIDS in Massachusetts in greater detail.

Rank of HIV/AIDS among leading causes of death in 2004[1]:

- In 2004, HIV/AIDS was the 24th leading cause of death in Massachusetts.
- HIV/AIDS was the 4th leading cause of death for Hispanic individuals, the 8th leading cause of death for black (non-Hispanic) individuals and the 27th leading cause of death for white (non-Hispanic) individuals.
- Among 25-44 year olds, HIV/AIDS was the 6th leading cause of death in 2004; nine years prior, it was the leading cause of death in this age group.

Non HIV-related deaths among people reported with HIV/AIDS, 1999-2002:

- From 1999 to 2002, 18% of deaths among people reported with HIV/AIDS were due to a non-HIV-related immediate cause of death.
- The top ten non HIV-related causes of death from 1999 to 2002 among people reported with HIV/AIDS were:

1. Cardiovascular Disease
2. Cancer
3. Drug/Alcohol Abuse
4. Liver disease
5. Respiratory Disease
6. Trauma
7. Renal Disease
8. Neurologic Disease
9. Diabetes
10. Hematologic, Coagulation Defect, Hemorrhagic

10. Metabolic
10. Suicide

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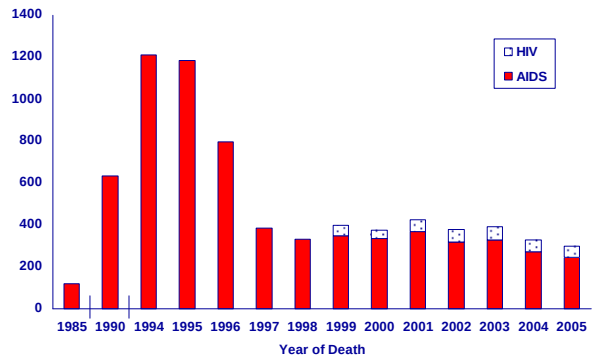
General statistics:

- After reaching a peak of 1,212 in 1994, deaths among people reported with AIDS declined each year through 1998, when there were 332 deaths. Note: death data for people reported with HIV infection (non-AIDS) are not available prior to 1999 because HIV infection was not a reportable condition before that time.

Figure 1. Number of Deaths Among People Reported with HIV Infection and AIDS by Year of Death: Massachusetts, 1985–2005



Note: Death data for people with HIV who had not yet progressed to AIDS are not available before 1999 and therefore not included here. Data Source: MDPH HIV/AIDS Surveillance Program; data as of 7/1/06

- From 1999 to 2005, the annual total number of deaths among people reported with HIV (non-AIDS) and AIDS ranged from 300 to 423.
- The proportion of deaths among people with HIV (non-AIDS) of total deaths among people reported with HIV/AIDS increased from 12% in 1999 to 18% in 2004. Note: people with HIV infection (non-AIDS) refers to those who were reported with an HIV infection diagnosis and did not progress to AIDS before death.

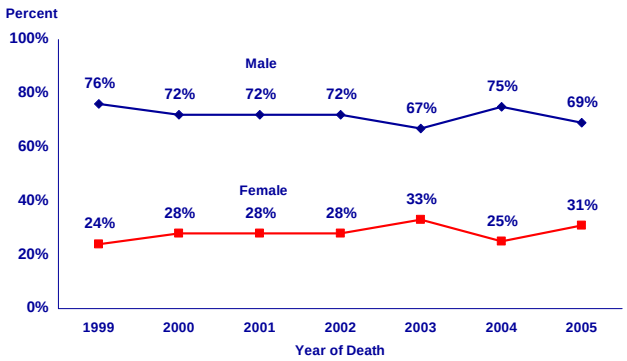
Deaths among people reported with HIV infection compared to deaths among people reported with AIDS:

- Among people dying with HIV infection (non-AIDS), there is a higher proportion of injection drug use as a reported risk of HIV exposure: 58% of people reported with HIV infection who died from 1999 to 2005 were reported with injection drug use as their risk, compared to 52% of people who died with AIDS.

Deaths among people reported with HIV/AIDS by gender:

- The proportion of deaths among people reported with HIV/AIDS who were female increased from 24% in 1999 to 31% in 2005.

Figure 2. Percent of Deaths among People Reported with HIV/AIDS by Gender and Year of Death: Massachusetts, 1999–2005



Data Source: MDPH HIV/AIDS Surveillance Program; data as of 7/1/06

Deaths among people reported with HIV/AIDS by place of birth:

- From 1999 to 2005, deaths among people reported with HIV/AIDS by place of their birth remained stable, with 75% to 79% of the deaths among people born in the U.S., 12% to 19% among people born in Puerto Rico or another U.S. dependency, and 5% to 10% among people born outside the U.S.

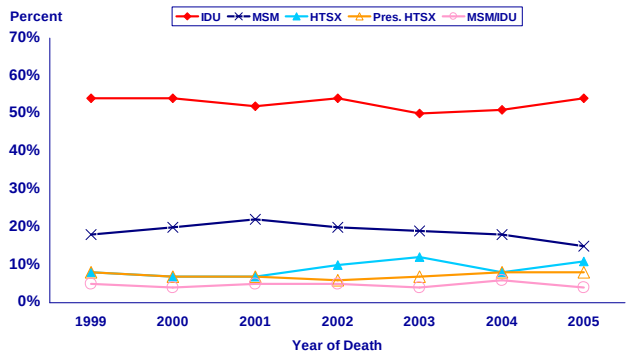
Deaths among people reported with HIV/AIDS by race/ethnicity:

- From 1999 to 2005, the proportion of deaths of people reported with HIV/AIDS who were white (non-Hispanic) ranged from 47% to 54%, black (non-Hispanic) from 22% to 30% and Hispanic from 18% to 27%.
- The number of deaths of people reported with HIV/AIDS who were Hispanic decreased by 30% from 1999 to 2005 (from 106 to 74), white (non-Hispanic) by 24% (from 189 to 143), and black (non-Hispanic) by 18% (from 98 to 80).

Deaths among people reported with HIV/AIDS by exposure mode:

- From 1999 to 2005, the distribution of deaths among people reported with HIV/AIDS by exposure mode remained fairly stable, with over 50% of deaths each year in people with a primary reported risk of injection drug use and 18% to 22% in people with a risk of male-to-male sex.

Figure 3. Percent of Deaths among People Reported with HIV/AIDS by Mode of Exposure and Year of Death: Massachusetts, 1999–2005



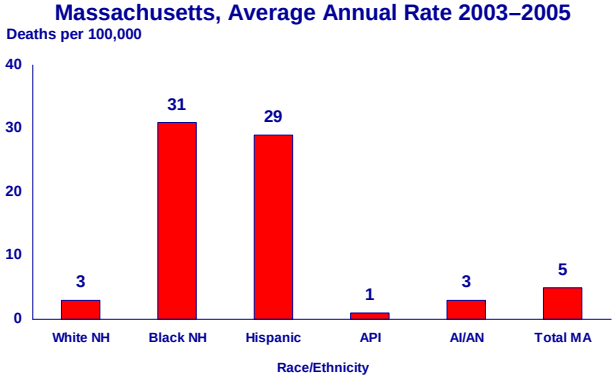
IDU= Injection Drug Use, MSM=Male-to-Male Sex, HTSX=Heterosexual Sex, Pres.=Presumed; Data Source: MDPH HIV/AIDS Surveillance Program; data as of 7/1/06

- From 1999 to 2005, the proportion of deaths among people reported with HIV/AIDS with a reported risk of heterosexual sex ranged from 7% to 12%, of presumed exposure through heterosexual sex from 6% to 8%, of male-to-male sex and injection drug use from 4% to 6%, and of all other risks 1% to 4%.
- From 1999 to 2005, the number of deaths among males reported with HIV/AIDS with a risk of injection drug use decreased by 31% (from 160 to 110), while the number of females decreased by 2% (from 54 to 53).

Average annual rate of death among people reported with HIV/AIDS by race/ethnicity, 2003–2005:

- As of July 1, 2006, for every 100,000 people in Massachusetts, an average of 5.3 people died with a reported diagnosis of HIV/AIDS each year within the years 2003 to 2005 (rate adjusted for age).
- The age-adjusted average annual rate of death for 2003 to 2005 for black (non-Hispanic) individuals reported with HIV/AIDS (31.0 per 100,000) is 11 times greater, and for Hispanic individuals (29.2 per 100,000) is 10 times greater than for white (non-Hispanic) individuals (2.9 per 100,000). These rates reflect HIV diagnosis by race/ethnicity: black (non-Hispanic) individuals are diagnosed with HIV infection at 14 times and Hispanic individuals at 10 times the rate of white (non-Hispanic) individuals.

Figure 4. Age-Adjusted Rate of Death per 100,000 Population Among People Reported with HIV/AIDS by Race/Ethnicity: Massachusetts, Average Annual Rate 2003–2005



1 Population sizes for rate calculations are based on year 2000 population estimates from the MDPH Center for Health Information, Statistics, Research and Evaluation, all rates are age-adjusted using the 2000 US standard population; NH= Non-Hispanic, API = Asian/Pacific Islander; AI/AN = American Indian/Alaska Native; Data Source: MDPH HIV/AIDS Surveillance Program, data as of 7/1/06

Case fatality rates by exposure mode and race/ethnicity:

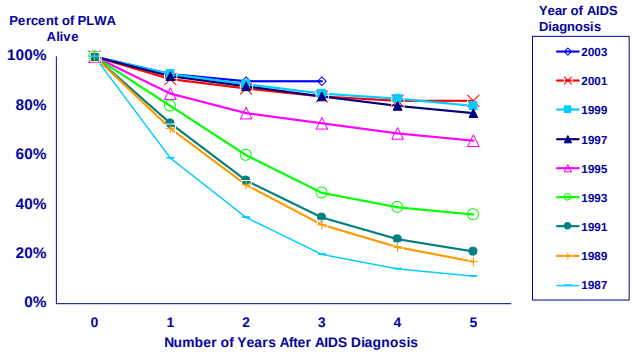
- The HIV/AIDS case fatality rate represents the proportion of people reported with HIV/AIDS who died in a specific time period. (See Appendix for a full explanation of case fatality rate calculations).
- From 2003 to 2005, for every 100 people diagnosed and living with HIV/AIDS there was an annual average of 2.2 deaths, or a case fatality rate of 2.2%.

- By exposure mode, the highest average case fatality rate (2003 to 2005) was for people with a primary reported risk of injection drug use at 3.9%, followed by male-to-male sex and injection drug use at 3.1%, heterosexual sex with partners of known risk and HIV status at 1.6%, other exposure modes (including perinatal and blood/blood products) at 1.5%, and male-to-male sex and heterosexual sex with partners of unknown risk and HIV status (presumed heterosexual) both at 1.2%.
- By place of birth, the lowest average case fatality rate (2003 to 2005) was for people born outside the US at 1.0%. The average case fatality rate from 2003 to 2005 was 2.4% for people born in the US and 2.5% for those born in Puerto Rico/Other US Dependencies.
- The average case fatality rate from 2003 to 2005 did not vary substantially by race/ethnicity: the case fatality rate was 2.3% among white (non-Hispanic) individuals, 2.0% among black (non-Hispanic) individuals and 2.1% among Hispanic individuals.
- The average case fatality rate from 2003 to 2005 was 2.1% for males and 2.2% for females.
- The average case fatality rate from 2003 to 2005 was 2.1% for white (non-Hispanic) males, and 2.2% for both black (non-Hispanic) males and Hispanic males.
- The average case fatality rate from 2003 to 2005 was 3.3% for white (non-Hispanic) females, 1.8% for black (non-Hispanic) females, and 1.8% for Hispanic females.

Trends in survival after an AIDS diagnosis:

- In comparing survival trends for people diagnosed in 1987 with people diagnosed in more recent years, it is evident that the proportion of people who survive with AIDS is greater for each time period. Among people diagnosed in 1987, 11% survived 5 years after an AIDS diagnosis compared with 21% diagnosed in 1991, 66% diagnosed in 1995, and 80% diagnosed in 1999.

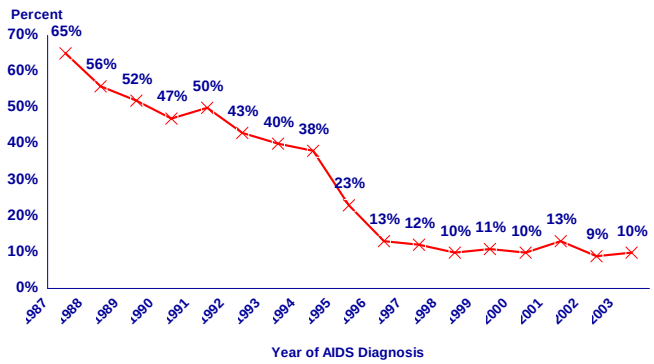
Figure 5. Percent of People Living with AIDS (PLWA) Who Are Alive 1-5 Years After an AIDS Diagnosis by Year of AIDS Diagnosis: Massachusetts, 1987–2003



NOTE: Trend lines are incomplete for more recent years of diagnosis because fewer years of observation are available; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/06

- From 1987 to 1996, the proportion of people diagnosed with AIDS who died within two years of their diagnosis declined from 65% to 13%.
- From 1997 to 2003, the proportion of people diagnosed with AIDS who died within two years of their diagnosis ranged from 9% to 13%.

Figure 6. Percent of People Who Died Within 2 Years of an AIDS Diagnosis by Year of AIDS Diagnosis: Massachusetts, 1987–2003



Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/06

Trends in morbidity - progression to AIDS after HIV infection diagnosis:

- Of 1,325 people diagnosed with HIV infection in 1999, 26% were concurrently diagnosed with AIDS (diagnosed within 2 months). By 1 year after HIV infection diagnosis, 39% had been diagnosed with AIDS, by 2 years 43%, by 3 years 46%, by 4 years 48%, by 5 years 49%, by 6 years 50%, and by 7 years 52% had been diagnosed with AIDS. Forty-eight percent have not progressed to AIDS.
- The time for progression to AIDS among people diagnosed with HIV infection from 2000 to 2004 follows a very similar distribution as those diagnosed in 1999 (see Table 4 of the Appendix.) This may suggest that treatment and care advances over the 5-year period have not reduced AIDS-related morbidity. Alternatively, this trend could be due to reporting patterns affecting the reported dates of HIV infection and AIDS diagnosis. At this point it is still too soon to perform a deeper analysis of progression to AIDS due to the limited length of time since initiation of HIV reporting (which was implemented in 1999). Future survival and progression analyses will help to identify sub-populations who may be experiencing differential morbidity and mortality.

Data Sources:

[1] Data included here represent HIV/AIDS-related deaths from Massachusetts Deaths 2004, Center for Health Information, Statistics, Research and Evaluation, available online at http://www.mass.gov/dph/bhsre/death/2004/report.pdf

All HIV/AIDS Case Data: Massachusetts Department of Public Health (MDPH) HIV/AIDS Surveillance Program, Data as of July 1, 2006

For more detailed information and a description of data limitations please see "HIV/AIDS in Massachusetts: An Epidemiologic Profile," available online at www.mass.gov/dph/aids